The U.S. EPA Airborne Spectral Photometric Environmental Collection Technology (ASPECT) an airborne platform equipped with special chemical and radiological sensors and imagery technologies. It detects chemicals while collecting aerial photos and videos for situational awareness during an incident. Critical information is processed in the aircraft and transmitted to a team of scientists who evaluates it before delivering it to decision makers. ASPECT serves as an initial screening tool to help the field responders make more informed decisions based on actual measurements. ASPECT does not fly through the hazard. All the information is collected from a safe distance away from the hazard using remote sensing technologies. For the Hurricane Harvey response, ASPECT leveraged its Fourier transform infrared spectrometer (FTIR) to identify and screen chemicals, an infrared line scanner to image and map chemical plumes, while georectifying the data onto aerial imagery.

ASPECT flew 28 flights over 112 hours covering 134 Risk Management Plan (RMP) facilities, 456 drinking water plants and 105 waste water plants in support of the Hurricane Harvey response from 31 August 2017 – 11 September 2017. This report covers the flights dated from 4 September – 11 September 2017. The screening level results from ASPECT were compared to the list of Texas Commission on Environmental Quality (TCEQ) short-term Air Monitoring Comparison Values (AMCVs). The screening data found no exceedances of the short-term AMCVs for compounds shown in Table 1. Each flight and its area targets are listed in Table 2.

Table 1.

Chemical Compounds	Short-term AMCV (ppm)[1]	ASPECT Detection Limit (ppm)[2]
1,1-dichloroethane	1.0	0.8
1-butene	27	12
acetone	11	5.6
dichlorodifluoromethane	10	0.7
ethyl acetate	4	0.8
ethylene	500	5
isobutane	33	15
methyl ethyl ketone	20	7.5
methylene chloride	3.4	1.1
n-butyl acetate	7.4	3.8
n-propyl acetate	2	0.7
propylene	Simple Asphyxiant	3.7
vinyl chloride	27	0.6

[1]Texas Commission on Environmental Quality (TCEQ) short-term Air Monitoring Comparison Value (AMCV)

[2] The concentration limits are derived using a 10-meter plume path length.

Table 2.

Date	Flight #	Primary Area	Detections Above AMCV*
9/4	14	Anahuac, Wallisville, Hankamer and Winnie TX	No Detections above AMCV
9/4	15	Point Comfort, and Bay City, TX	No Detections above AMCV
9/5	16	-	
9/5	17	El Campo, Wharton, Lane City, East Bernard, West Columbia, and Sweeny, TX	No Detections above AMCV
9/6	18	Kay, and Cypress, TX	No Detections above AMCV
9/6	19	Angleton, and Lake Jackson, TX	No Detections above AMCV
9/7	20	Houston, TX	No Detections above AMCV
9/7	21	Freeport, and Brazoria, TX	No Detections above AMCV
9/8	22	Beaumont, Nederland, Port Arthur, and Orange, TX	No Detections above AMCV
9/8	23	Houston, Deer Park, Baytown, Mont Belvieu, and Texas City, TX	No Detections above AMCV
9/9	24	Danbury, Liverpool, Galveston, and Texas City, TX	No Detections above AMCV
9/9	25	Alvin, Santa Fe, La Marque, Dickinson, and League City, TX	No Detections above AMCV
9/10	26	Alvin, Iowa Colony, Sienna Plantation and Arcola, TX	No Detections above AMCV
9/11	27	La Porte, Pearland, Almeda, and Houston, TX	No Detections above AMCV
9/11	28	Needville, Rosharon, Arcola, Iowa Colony, and Sienna Plantation, TX	No Detections above AMCV

*Texas Commission on Environmental Quality (TCEQ) short-term Air Monitoring Comparison Value (AMCV)